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WILLIAM M. NORRIS,

PRINCETON, N. J.

ANALYTICAL AND CONSULTING CHEMIST

SPECIALTY--THE LEATHER TRADE.

MANUFACTURER OF
SPECIAL PREPARATIONS USED IN THE
MANUFACTURE OF LEATHER.

"NEW SOLID BATE."	"THE NORRIS BLACK,"
"NEW GAS BATE."	(formerly known as Standard Iron Liquor).
"BLEACHING TAN SWEETENER."	"GLACÉ BLACK."
"NEW CLEAN SIG."	"HARNESS LEATHER BLACK."
"HARD HIDE AND SKIN SOFTENER."	"EGG YOLK SUBSTITUTE."
"RUSSIAN STUFFING."	"SEASONING GLAZES."

The Princeton Press:
C. S. ROBINSON & CO., STEAM POWER PRINTERS.
1888.

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I would again respectfully call your attention to the merits of my preparations which are largely used by leading manufacturers in all parts of the country.

These preparations are all prepared under my personal supervision from formulas originated by myself and protected by patents and caveats which I own.

The trade is warned against worthless and fraudulent imitations.

During the past three years I have visited numerous tanneries in all parts of the country, and the kind co-operation of my friends in the trade has enabled me to determine their needs, to conduct many practical experiments, and to bring my preparations to their present high state of perfection.

In describing my preparations I have avoided indiscriminate praise which is indulged in by so many parties who endeavor to sell to this trade and which convinces no one, and have confined myself to a clear and just setting forth of their merits.

Competition in the leather trade is now very sharp, the margin of profit in turning hides into leather is very small, and no material which increases the cost of the finished product would be looked upon with any favor.

The special preparations which I describe below have all been put to the sure test of practical use, and their merits have substantiated all that was claimed for them, and in all cases they will save money and will prove desirable in other ways.

I would state for the benefit of those who have never dealt with me before, that I guarantee all my preparations to be exactly as represented, in so far, that should there be any complaint I will refill the order gratis or refund the money paid. The prompt shipment and safe arrival of goods is also guaranteed.

CA 10-2491 4/10/11

"BATE."

Chicken and pigeon pures are still largely used for this purpose. The hides after being unhaired and washed are thrown into an old bate where they are allowed to remain a few hours; they are then removed and placed in a new bate where they remain over night.

In this the hides completely lose their plumpness and become soft and slippery, the lime is largely neutralized, and the dirt, grease and fine hairs work out of the hides freely when they are subsequently slated. The theory of the action of the bating process is somewhat obscure. Some attribute its action to the effects of the salts of ammonia, while no doubt the salts of ammonia do neutralize the lime, but when they are used alone they do not have the desired effect of softening the epidermis and properly preparing the hides for the tan. In fact, as Proctor has pointed out, the process is a fermentive one. The active bate swarms with the bacteria and to this fermentive or putrefactive action, rather than to its chemical constituents the action of the bate must be attributed.

That manufacturers should still continue to use these disgusting substances is extraordinary. This is no doubt due to the fact that the men in charge of this process of bating from long experience are perfectly familiar with the properties, action and effects upon hides of chicken and pigeon pures. And also to the fact that the various substitutes introduced to the trade, owing to a misconception of their originators, as to what was required of a bate, did not accomplish what was desired.

If the above theory is correct, a "Bate" to be effective must neutralize the lime, and also reduce the hide until it becomes soft and slippery, and also so act upon the epidermis that the pores are thoroughly opened, so the dirt, grease, and fine hairs work out freely upon the beam, leaving the hides thoroughly cleansed and in perfect condition for tanning. This my "New Solid Bate," which I have recently originated, thoroughly accomplishes. It has a mild fermentive action on the skins and develops in the bate vat weak organic acids which neutralize the lime in a perfectly safe way; it also reduces the skins, opens the pores of the epidermis, and thoroughly accomplishes all that is required of a bate.

Its other advantages over pures are:

- 1) It is solid, dry and compact in bulk (100 lbs. to cubic foot), but little space is required for storage. Charges for transportation are low.
- 2) It is all packed in neat 4-lb. paper boxes, so marked that pounds and half pounds may be cut off without bother of weighing.
- 3) It is clean, and develops no offensive odors, unaffected by thunder-showers or other atmospheric changes.
- 4) It quickly dissolves in water, does not require watching while in use, as its action is regular and always the same.

5) It contains all the operative and useful properties of the old bates, but is free from odor and injurious useless ingredients, such as sand, dirt, etc., which constitute about nine-tenths of all animal pures.

DIRECTIONS FOR USE.

1 lb. of New Solid Bate is sufficient for a pack of hides, 42 70-lb. hides, or 70 35-lb. hides, or 30 90-lb. hides.

1) Take a clean barrel, remove the head and place a spigot in the side about six inches from the bottom. Place the barrel in convenient proximity to bate vats.

2) From the package shave with a knife the desired quantity into a bucketful of warm water. Rub these shavings under water between the thumb and finger until dissolved (it will not injure the hands in any way).

3) Pour this into the barrel which has been filled about half-full of warm water, stir well and allow to stand at least twenty-four hours.

4) Draw off nearly all the contents of barrel and pour into the warm water of the abating vat, stir well, and put in hides, which have been washed after unhairing.

5) Prepare more bate as before, for the next day, and so on.

6) When the hides are removed from the abating vat, run off nearly but not quite all of the old bate liquor.

It will be noticed that no change in the usual factory arrangements are required in using my "New Solid Bate." All bates work best in pools or tubs in which there is a wheel. Many puremen do not run off the liquor from the abating vat but freshen it up from day to day with new bate. If this method is pursued, the contents of the abating vat should be well stirred up and about one-third drawn off every day and warm water and fresh bate solution added. In this manner the same bating solution can be used for several weeks.

Price of "New Solid Bate," 35 cts. a pound, all packed in 4-lb. paper boxes; 25 of these in 100-lb. cases. One 4 lb. package free by express, \$1.50.

"NORRIS' BLEACHING TAN SWEETENER."

This preparation was originated by me in the Summer of 1885, and in December of that year I filed a caveat in the Patent Office at Washington to protect my rights. Watt, in his recent work on the Manufacture of Leather, says, "It being an established fact that tannic acid, under the influence of moisture and atmospheric air, becomes converted into gallic acid, it will readily be understood that tan liquors which are constantly exposed to the air will naturally be susceptible of this change, and, as a consequence, a portion of their active principle (tannin) must in course of time suffer decomposition. Apart from this, however, a fermentive process takes place in the liquors, by which a considerable por-

tion of the tannin is converted into gallic acid. This is called gallic fermentation, and has been a constant source of loss and trouble to the tanner." My "Tan Sweetener" when used in small quantities in the "handlers," "lay-aways," etc., entirely prevents this change from taking place, and preserves all the tannin intact to be combined with the hides and taken out as leather, at the same time making stock a better and lighter color.

But a tanner may say, "I require sour liquors at the first stages of my tanning to plump my stock and remove lime." This is true and only enough "Tan Sweetener" should be used to keep the liquors sweet while stock is being tanned. The liquors will soon sour afterwards, when they may be used for plumping, etc. Its other advantages are, that it kills any remaining trace of lime that may be in the stock and thoroughly cleanses the stock from all foul animal matter, and arrests any tendency to decay which may have been derived from the sour plumping liquors or bate. If used as directed it cannot injure the stock in any way. The SWEETENER softens the water in the tan vat, facilitates the tanning, and makes stock a better and lighter color.

GENERAL DIRECTIONS FOR USE.

1) ALWAYS USE A WOODEN SPIGOT IN THE BARREL AND DRAW OFF IN A WOODEN PAIL.

2) Fill a pool or tub about two-thirds full of water, then to every 1000 gallons of water pour 1 gallon of my "Tan Sweetener." Put the hides or skins in this, as they come from the bate or sour liquors. After being washed and worked, stir the stock around for a few minutes and allow to remain over night. In the morning they will be thoroughly cleansed and in perfect condition to enter the tan liquors.

3) In each "handler" or "drum" use 1 gallon of the "Tan Sweetener" at first and a small quantity from day to day as circumstances require. The stock at once take a fine color in the "handlers" which is maintained through the whole tanning process.

4) In each "lay-away" use 1 gallon. This is a very valuable preparation for Hemlock Tanners as it saves much material and produces a fine color. Also for the same reason for Union Crop, Patent Leather, Bag, Belting, Lace, Harness and Upper Leather Tanners, and for retanning purposes.

Bark Extract Manufacturers will find it valuable, as it destroys the coloring matter extracted from the barks and protects the tannin from the injurious effects of too much heat in the process of manufacture. And the resultant extract will be of a better color and less liable to ferment when used. "Tan Sweetener" is used for this purpose, with the ground barks, 1 gallon to a ton.

Price of Norris' "Bleaching Tan Sweetener," 25 cents a gallon, about 3 cents a pound. Sold by the barrel, 5-gallon sample kegs, \$1.25.

Oak liquors are very difficult to keep sweet. I make an extra grade suitable for this purpose at 50 cents a gallon.

Many tanners do not know how much their pools, vats, tubs, &c., contain. And as it is important to obtain the best results that my "Tan Sweetener" should be used in the proportions mentioned above, the following rules for estimating the contents in gallons of pools, vats, etc., is given here.

For a rectangular tub, tank or vat—Multiply the length in feet by the width in feet, and this product by depth in feet, and the whole product by $7\frac{1}{2}$. This will give, roughly, the contents in gallons.

For a circular tub, tank or vat—Square the diameter in inches and multiply this product by the depth of tank, tub, or vat, in inches. Now take three-fourths of this product and divide by 231. This will give the contents in gallons.

"HARD HIDE SOFTENER."

This is a new preparation which I have recently originated. It is used in the soak before the stock is limed or milled. It is not a depilatory but simply a safe and reliable aid in softening the hardest sundried stock, Patna goat and other skins. It preserves the stock while in the soak from putre action, and by its use much time is saved, and also labor in handling and breaking; cracks and other injuries are avoided.

At all seasons the driest stock yields quickly to its action, and is made quite like green stock, in perfect condition for sweating, or liming and bating, as the case may be.

No watching or extra handling is required and usually no milling. The hides are often taken directly from the soak and thrown into the limes without washing. When the hair is to be removed by sweating, the hides must be thoroughly washed before hanging up.

DIRECTIONS.

Two gallons of the Softener should be well stirred into a tub of water containing about 500 gallons, the stock put in without being tightly pressed, and allowed to remain in about twenty-four hours; of course the time and quantity of Softener used must vary with hardness of stock treated. The second soak can be used by adding one-half first quantity of Softener, one quarter fresh water; the third soak must be made new like the first, and the fourth like the second, and so on alternately. When the object is merely to preserve the hides from rotting while they are in soak, use 2 quarts of my Softener to 1000 galls. of water.

Price, 75c. a gallon. Sold by the barrel, and also in 5-, 10-, and 20-gallon kegs.

"A NEW CLEAN SIG."

This preparation was originated by me about two years ago, and is now used largely in the trade. It is designed to render unnecessary the

use of the ordinary Sig in tanneries, which is so offensive, and also the use of soda and other caustic and injurious articles used to replace it. My Sig works well, when boiled with logwood it extracts all the coloring matter from it most thoroughly, far more so than the ordinary Sig, and when this is applied to the stock it cuts the grease and other undesirable matters most perfectly from surface of stock and gives a most thorough preparation for the black. It also possesses this advantage over the use of the ordinary Sig, and it is a very important one, that is, that leather treated with this preparation will not have the spue or white cloud come up on the surface of black. For harness leather my Sig is put up in liquid form.

DIRECTIONS.

Draw off from the barrel 1 gallon of Sig and mix with it 7-gallons of water. Now in this 8 gallons boil as much logwood as you would in 8 gallons of ordinary Sig. Allow this to cool off till it is about blood heat (98° Fah.), then apply to stock in usual manner.

Sold by the barrel, 30 cts, a gallon ; 5-gallon sample keg, \$1.50.

"HARNESS LEATHER BLACK."

This is a new preparation which I have recently originated and is especially adapted to harness leather. It is somewhat similar in composition to what hat manufacturers use to color hats. It is made in quantity by exact rule and tested before sending out, so absolute uniformity is secured. It is applied to surface of sides by means of a brush, after the sides have been treated to an application of logwood and sig. The color sets well, uniformly and quickly, does not strike through and remains soft while stored. The color is a deep rich black, no blueness, which is so common and undesirable on harness leather. But one grade made which is very strong, and in all cases must be diluted with about twice its bulk of water.

Sold by the barrel, 16 cts. a gallon net, 5-gallon sample keg, \$1.00.

"RUSSIA STUFFING."

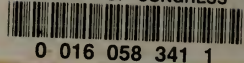
This is a perfectly clean oil, entirely free from gum of all kinds, it may be used alone or combined with other materials, tallow, oils, wax, etc. It never becomes rancid or shows white on surface of the leather. During cold weather it requires to be slightly warmed, and applied in small quantities it sinks well into the leather, rendering it soft, firm and of fine finish, and making it keep and last well when stored.

Price, 12 cts. a lb., packed in barrels.

Samples of any of my preparations free, recipient to pay express charges.

Address all orders and communications direct to

P. O. Box 17. WILLIAM M. NORRIS,
PRINCETON, N. J.



CHEMICAL ANALYSIS FOR THE TANNERY.

Tanners are beginning to appreciate slowly, very slowly, what chemistry can do for them in various ways. The amount of tannin in barks, extracts, sumac, gambia, etc., is of the greatest importance as the amount and quality of the tannin in the various products alone constitute their value.

To determine before purchasing how much tannin an extract or lot of bark contains would in many cases effect a great saving.

Barkometers and specific gravity gauges which are much used are valuable in giving comparative results, but are frequently unreliable as many tan liquors. Spent liquors, etc., have substances in solution which increase their density without adding to their strength.

Careful Chemical analysis alone can determine the amount of tannin present.

Besides the question of tannin there are various other matters coming to the attention of the manufacturer of leather which require chemical investigation. The water used about the works may be undesirable. The blacks, mordants, etc., sometimes do not work properly. It is important to have tallow free from water and acids, and oils which do not leave a gummy surface, and other matters which are frequently coming up.

All chemical work entrusted to me will be done with the greatest care and at a very moderate cost. I would suggest to parties requiring chemical work to be done, to send their samples to a chemist rather than to those who, though they advertise for and solicit this work, have no knowledge of the matter themselves, and are obliged to trust other parties to do their work for them, often in an imperfect manner.

PRICE LIST. Estimation of Tannin in Barks, Extracts, Sumac, Gambia, Tan Liquors, Spent Bark, etc., \$5.00 each.

Hardness of Water, \$4.00. Total solids in Water, \$5.00. Sanitary Analysis of Water, \$10.00.

Determination of Gum in Oils, \$5.00. Water in Degrees \$5.00.

Analysis of Egg Yolk, \$10.00.

Free Acid in Blacks, \$10.00. Specific Gravity and Iron in Blacks, \$10.

Send for more complete price list.

Parties contemplating sending materials for analysis, will kindly write beforehand, so directions can be sent in regard to sampling, packing and shipping. All materials should be sent by mail or express, charges prepaid, to my office, Princeton, N. J.

Address all communications to WM. M. NORRIS, Princeton, N. J.
P. O. Box 17.

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